MANAGEMENT STYLES OF LABORATORY MANAGERS IN THE VETERANS ADMINISTRATION HOSPITAL SYSTEM

BY

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Abstract of Dissertation Presented to the Graduate School
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MANAGEMENT STYLES OF LABORATORY MANAGERS
IN THE VETERANS ADMINISTRATION HOSPITAL SYSTEM

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This study was designed to determine, based upon responses to Reddin's Management Style Diagnosis Test, the management styles and demographic characteristics of the total population of Veterans Administration Medical Center laboratory managers in the United States, the proportion of effective to ineffective managers in the system, and demographic characteristics of VA laboratory managers. The demographic characteristics were determined by using a personal data questionnaire developed by the investigator.

Effective management styles were used by 86.36% of the male laboratory managers and 74.19% of the female laboratory managers. This difference was statistically significant using the chi-square technique. Most of the VA medical center laboratory managers were very effective with 79.99% using effective management styles. The two

most popular styles were the developer management style and the executive management style. The VA laboratory managers were well-educated. Almost half (49.99%) had earned graduate degrees at the time of the study. Most laboratory managers had not transferred from one VA medical center to another and most VA laboratory managers were not veterans.

A majority of laboratory managers had been laboratory managers for five years or less. Only 5 of 75 respondents had been laboratory managers for over 20 years.

Most of the laboratory managers in the study had received several special awards. Over half the laboratory managers who participated in the study received between two and four special awards.

Most of the laboratory managers were GS 11s and GS12s. An up-grading program was being phased in during the time of the study. The number of GS12s should increase and the number of GS11s should decrease.

The majority of the VA laboratory managers were males between the ages of 31 and 40. Age was not a factor related to management style.

CHAPTER I
INTRODUCTION

The Veterans Administration (VA) operates 172 hospital laboratories in the 48 contiguous states, Alaska, and Puerto Rico. Functions in the areas of blood banking, tissue typing, clinical chemistry, hematology, urinalysis, surgical pathology, and microbiology are performed in these laboratories. Whereas officially a pathologist has the responsibility for operating a laboratory, a non-physician manager oversees the day-to-day operation of the laboratory. This study was designed to determine, based on responses to Reddin's (1964) Management Style Diagnosis Test, the management styles and demographic characteristics of Veterans Administration hospital laboratory managers, the percentages of effective and ineffective managers in the system, and the characteristics of VA laboratory managers.

Background of the Study

The Veterans Administration (VA) medical system is comprised of 172 medical centers, 226 outpatient clinics, 99 nursing homes, and 16 domicilaries (Veterans Administration, 1983). Thus it is the largest health care system in the western world.

An extensive program of medical education, training, and clinical experience for most of those persons in health care occupations is provided by the Veterans Administration through its affiliation with more than 2,300 schools of medicine, dentistry, pharmacy, nursing, medical social work, and other disciplines. More than 100,000 individuals have been trained at the undergraduate and graduate levels of clinical education in VA medical centers. In 1983, 135 VA medical centers were affiliated with medical schools. Two VA employees received the Nobel Prize in medicine in 1977 (Raffel, 1980).

Veterans Administration medical centers have less manpower per patient than other medical centers or hospital systems (Raffel, 1980). On a per-patient basis, VA medical centers employ fewer physicians, fewer support personnel (including those in the field of nuclear medicine), fewer X-ray and laboratory employees, and fewer housekeeping and food service employees than other medical centers or hospital systems. Raffel (1980) found no studies indicating that the lower number of personnel resulted in inadequate medical care for patients of VA medical centers. Although inadequate care may occasionally occur (Hospital Served, 1984), the care rendered in VA medical centers is considered on par with that in other medical centers.

Responsibilities of Laboratory Managers

Medical support personnel staff and manage hospital and medical laboratories. Medical technologists are responsible for the operation

and management of the following laboratory departments: blood banks, clinical chemistry, tissue typing, hematology, urinalysis, surgical pathology, and microbiology.

Laboratory managers not only must oversee the operation of the laboratory but also communicate information and coordinate activities with other departments in the medical center. For example, the laboratory staff must return laboratory results to emergency rooms, intensive care units, medical and surgical wards, and operating rooms as quickly as possible after a test is ordered. The laboratory test request must be initiated, the specimen must be collected and labeled properly, and the results delivered in writing or by telephone to the originating unit. For the system to operate efficiently, several departments in the medical center must cooperate.

Laboratory managers are responsible for a substantial portion of hospital budgets. According to O'Neil (1982), 15% of hospital budgets are used for the operation of laboratory services, and more than 10% of the capital outlay funds of hospitals are used to purchase laboratory equipment. The laboratory manager must make decisions involving large sums of money. For example, a chemistry profile instrument can cost $500,000 and an accompanying service contract usually amounts to approximately $35,000 per year (J. Wright, personal communication, May 18, 1984). Laboratory managers' responsibilities include making recommendations for laboratory employee hiring and

termination. They also include making recommendations for special employee awards and implementing medical center administration policies (Veterans Administration Medical Center, 1981).

According to O'Neil (1982), key responsibilities for laboratory managers include quality assurance, service delivery, personnel resources management, and financial management. O'Neil also noted that, if hospital administrators and laboratory managers meet and develop and outline of responsibilities that embody the above elements, medical center personnel can be expected to provide reliable laboratory services responsive to the needs of both staff and patients.

Education of Laboratory Managers

Most medical technology programs consist of a four-year curriculum leading to a baccalaureate degree in medical technology. The last two years of study consist mainly of chemistry, physics, mathematics, and courses related to medicine. Prospective medical technologists have little opportunity to enroll in management courses. Nine medical technology programs are located in the state of Florida. Perusal of the nine college catalogs reveals that only two programs include management/administration courses. These are actually mini-courses, shorter than one semester. Medical technology program coursework is based on national standards or "essentials" by the American Society of Clinical Pathologists (H. Dolen, personal

communication, May 20, 1984). Programs must meet these standards to be accredited. Students have little opportunity for elective courses because of the extensive course requirements necessary to meet these standards.

Selection of Laboratory Managers

Laboratory managers in the VA medical center system are, for the most part, medical technologists who have been promoted from the laboratory workbench to a position of middle management. In the VA personnel framework a pathologist is considered the head of a VA medical center laboratory. Although this is officially true, a medical technologist usually functions as the laboratory manager.

Veterans Administration laboratory managers are almost always experienced medical technologists. The assumption is that to teach a medical technologist what he or she needs to know about management and business is easier than to teach a business person what he or she needs to know about a laboratory.

According to the United States Office of Personnel Management (OPM) in Orlando, Florida, the VA selection policy for laboratory managers is as follows:

1. Personnel employees screen VA laboratory manager applicants on the basis of background data recorded on applications or in personnel files.
2. The chief pathologist of the VA interviews the top three to five applicants, who are screened on the basis of a subjective 100-point scale.

The regional OPM for the Gainesville, Florida, area is in Orlando, Florida, but the policies and procedures are used nationwide and systemwide. The most important characteristic is the applicant's educational level. The next most important factor is a match of work experience and the job description (L. Blondett, personal communication, May 18, 1984). Veterans receive five extra points on the 100-point scale and disabled veterans receive an additional five points.

Veterans Administration laboratory managers who want to increase their job responsibilities and federal general services (GS) level, resulting in a salary increase and an increased salary potential, must transfer to a larger and more complex institution. Veterans Administration medical centers are divided into five classes, depending on the number of hospital beds and type of medical center. A class V medical center is a psychiatric medical center with 300 to 600 beds. The laboratory manager is at the GS 10 level. A class IV medical center is a psychiatric medical center with more than 600 beds, requiring a larger laboratory staff with additional responsibilities, and the laboratory manager is at the GS 11 level. A class III medical center is a general medical and surgical medical center with 300 or fewer beds. The laboratory manager of this medical center is also at the GS 11 level. A class II medical center is a general medical and surgical medical center with 300 to 600 beds,

excluding nursing-home beds. This medical center has a GS 12 level laboratory manager because of the larger staff, the increase in the average GS level of the staff, and the complexity of services the laboratory offers. The most complex institution in the VA medical center system is the general medical and surgical medical center with more than 600 beds excluding nursing-home beds. These medical centers are categorized as class I institutions and usually require the services of a GS 13 level laboratory manager. Class I medical centers usually have specialty services such as a spinal-cord injury unit or a gambling and alcohol rehabilitation unit (E. Dougherty, personal communication, October 14, 1984).

Given this state of affairs in VA medical centers, efficiency would seem to be critical for successful medical center operation. Although studying the effectiveness of the VA medical center system as a total functioning group was possible, examining the characteristics of a specific unit first was felt to be appropriate. The focus of this study was on the managers of VA medical center laboratories.

Statement of the Problem

The study was designed to determine, based upon responses to Reddin's Management Style Diagnosis Test, the management styles and demographic characteristics of Veterans Administration medical center laboratory managers, the proportion of effective to ineffective managers in the system, and demographic characteristics of VA

laboratory managers. To attain this purpose, the following specific questions were posed:

1. What management style categories do Veterans Administration medical center laboratory managers select as being most descriptive of themselves?
2. What percentage of laboratory managers respond to the Management Style Diagnosis Test (MSDT) in such a way that they are characterized as effective as opposed to less effective?
3. What are the demographic characteristics of the effective versus the less effective managers, as categorized by the Management Style Diagnosis Test?
4. Is the distribution of effective and ineffective managers significantly different for males and females?
5. Is the distribution of effective and ineffective managers significantly different for different age categories?
6. Is the distribution of ineffective and effective managers significantly different for those holding bachelor's and those holding graduate degrees?

Limitations and Delimitations

This ex post facto study was conducted within the following parameters:

1. The study population consisted of 172 laboratory managers in the Veterans Administration medical centers of the United States.

2. Measures of management styles and consequently of effectiveness were described by the Management Style Diagnosis Test (MSDT).
3. The demographic data were limited to those responses on a personal data questionnaire.
4. Self-report measures have a limitation. Most individuals tend to respond honestly; however, individuals may be reluctant to supply information of a sensitive nature (Kerlinger, 1973).
5. Responses from subjects who returned incomplete personal data questionnaires of Management Style Diagnosis Tests were not included.

Significance of the Study

No studies of medical technologists and their management styles and management effectiveness have been conducted. Most medical technologists have not had specific training as managers. However, certain medical technologists act as laboratory managers since they must coordinate activities with other medical center departments, must be responsible for a substantial portion of a medical center budget, and must make personnel decisions. Laboratory managers are almost always chosen from a pool of medical technologists who are by definition educationally deficient in management skills. Given that VA medical center laboratories seem to operate efficiently, an

identification of management styles of laboratory managers in the VA system could have ramifications for those involved in personnel selection in other medical centers.

Definitions of Terms

Management styles measured by the MSDT. Effective styles of management, as measured by the MSDT (Reddin, 1964) are the following:

1. Benevolent autocrat is a manager who uses low relation orientation with a high task orientation in situations where such behavior is appropriate and effective. The manager is perceived as knowing what the goals are and how to have them achieved without having created resentment (Reddin, 1970).
2. Bureaucrat is a manager who is perceived as being primarily concerned with rules and procedures for their own sake, who wants to control situations by their use and is seen as conscientious. Bureaucrats use low relation orientation, use low task orientation, and are effective (Reddin, 1970).
3. Developer is a manager who uses a high relation orientation and low task orientation in situations where such behavior is appropriate and effective (Reddin, 1970).
4. Executive is a manager who uses a high relation orientation and a high task orientation in situations where such behavior is appropriate and effective. The manager is perceived as

a motivating force, who sets high standards, treats everyone differently, and prefers team management (Reddin, 1970).

Ineffective styles of management, as measured by the MSDT (Reddin, 1964), are the following:

1. Autocrat is a manager who uses low relation orientation and high task orientation in situations where the style is inappropriate and less effective. The manager is perceived as having no confidence in others. The manager is interested only in the immediate task (Reddin, 1970).
2. Compromiser is a manager who allows various pressures in situations to influence him or her too much. This type of manager tends to minimize or avoid the immediate pressures and problems rather than maximizing long-term goals. Compromisers use high relation orientation, high task orientation in situations that are inappropriate and less effective (Reddin, 1970).
3. Deserter is a manager who uses low relation orientation and low task orientation in a situation where such behavior is inappropriate and ineffective. The manager is perceived as passive, uninvolved, or negative (Reddin, 1970).
4. Missionary is a manager who uses a high relation orientation and a low task orientation in a situation where such behavior is inappropriate and ineffective. The person is perceived as primarily interested in harmony (Reddin, 1970).

The following additional terms are defined as they are used in this study:

Age at the time of selection is the laboratory manager's age when selected as a laboratory manager.

Dominant style is the management style an individual uses most frequently (Reddin, 1970).

Effectiveness is the quality of producing a desired result.

Efficiency is the ability to produce the desired result with a minimum of effort, expense, or waste.

GS level is the general service schedule level at which a laboratory manager in the VA system is paid.

Inter-transfers in VA systems are transfers of the laboratory manager from one medical center to another before assuming the position of laboratory manager.

A laboratory manager is an administrator in the VA hospital system who supervises the section supervisors and implements hospital administration policy concerning the clinical and anatomical laboratories in providing service support for patient care.

Management style is an assessment of the appropriateness and effectiveness of a particular style in a past situation (Reddin, 1970).

Management Style Diagnosis Test (MSDT) is an instrument used to measure the self-perceived management style of a manager in the

position that person holds at the time of taking the test (Reddin, 1970).

Prior military service is military service, including active duty and active reserve duty, of subjects in this study.

Relation orientation is the extent that a manager has personal job relations characterized by listening, trusting, and encouraging (Reddin, 1970).

Special VA awards received are monetary payments equal to one pay step.

Style profile is a bar chart showing the degree that a manager uses each of the management styles (Reddin, 1970).

Style synthesis is an average management style based on all styles used (Reddin, 1970).

Supporting style is the management style a manager uses next most frequently after the dominant style (Reddin, 1970).

Task orientation is the extent that a manager directs subordinates and subordinates' efforts characterized by listening, organizing, and directing (Reddin, 1970).

Instrumentation

This study was designed using the Management Style Diagnosis Test based on Reddin's (1970) 3D theory. The instrument was used to determine the management styles used by Veterans Administration laboratory managers in their present roles. A personal data

questionnaire was also used to elicit personal data routinely found in Va employee personnel folders.

The population of this study was a potential study population of 172 laboratory managers in VA medical centers throughout the United States. Those managers were sent a packet containing a cover letter explaining the study (Appendix A), a Management Style Diagnosis Test (MSDT), and a personal data questionnaire (Appendix B).

Management Style Diagnosis Test

Reddin (1967) developed the Management Style Diagnosis Test (MSDT) to identify styles of managers and of organizations. The MSDT was developed primarily as a training instrument although the test has been validated for identifying management styles. The MSDT consists of 64 paired statements. Respondents were asked to select one from each pair which they felt best described the way they behaved in the job they were holding at the time. The test, therefore, measured a manager's perception of management style in his or her job. Managers who changed jobs and took the test again could be expected to score differently. If the job demands changed, the management style usually changed also. The resulting score determined which of eight management styles was reflective of the respondent. A management style profile produced was plotted as a vertical bar chart. Heights of bars indicated the score obtained for each of the eight styles.

The MSDT is based on Reddin's 3-D theory in which management is analyzed in three dimensions--task orientation, relations orientation,

and management effectiveness. Placement in the three-dimensional model determines which of the eight management styles, four of which are effective and four of which are less effective, is most descriptive of the respondent. For example, two management styles are low in task orientation and low in relations orientation, the deserter style (ineffective) and the bureaucrat style (effective). If the situation required managerial behavior which is low in both task orientation and relations orientation, then the style is deemed appropriate and the manager would be designated a bureaucrat (effective). If the situation required a different management style, then the manager using the low task orientation and low relations orientation would be using an inappropriate management style and would be classified as a deserter (ineffective) (Reddin, 1970). The situations used in the MSDT are not pure situations but incorporate values and beliefs which either enhance or diminish management effectiveness (Reddin, 1974).

This pattern follows in the remaining management styles. The management styles for high relations orientation and low task orientation are developer (effective) and missionary (ineffective). If the situation requires this style, the manager is designated a developer. If the style is inappropriate for the situation, the manager is designated a missionary (Reddin, 1970).

The four remaining styles are high in task orientation. If the situation requires a manager who uses low relations orientation and

high task orientation, the manager would be classified as a benevolent autocrat (effective). If the situation requires another style, then the manager is less effective and would be classified as an autocrat (ineffective). The two remaining styles use a high relations orientation and a high task orientation. If the situation requires a manager of this type, the manager uses an executive (effective) style. If the style is inappropriate to the situation, the manager would be less effective and would be classified as a compromiser (ineffective).

By combining the three diagnostic measures--task orientation, relations orientation, and effectiveness--a style synthesis could be produced. The style synthesis is the average style based on overall behaviors. The synthesized style is almost always the dominant style or style which is used most often. The synthesized style also gives some indication of the organizational philosophy. If a group of managers from the same organization is analyzed, the organizational philosophy can be determined by using the style synthesis. The writer used the synthesized style as the management style reported because of the added information it provided about the organizational philosophy of the VA medical center system and because of the limited size of the study sample.

Reliability of the MSDT. Reddin (1970) compared subcategories of a designated pool using the MSDT and found it to be an accurate instrument for collecting data on management styles. The test-retest reliability coefficient was found to be .83.

In 1974, Reddin examined the MSDT for reliability using a sample of 970. By comparing several subcategories of the sample, he consistently found differences in management styles at the .01 level of significance.

Validity of the MSDT. Reddin (1970) established the validity of the MSDT by using the Management Position Analysis Test (MPAT). The researchers compared two groups on all measures. The MPAT consisted of 10 measures for the eight management styles and task orientation and relations orientation. Conclusions reached using the two instruments were similar.

Davies (1972) administered the MSDT and the Blake and Mouton grid at the same time to a group of policemen who were candidates for supervisory positions. The MSDT findings were consistent with the civil service evaluation using the Blake and Mouton grid. Davies also found that the MSDT produced a finer and more credible score concerning dominant and supporting management styles.

Researcher-Designed Questionnaire

The questionnaire was designed to elicit data about the participants in the study. Information sought was in VA personnel files and included educational level at the time of employment, educational level at present, number of times transferred in the VA system before employment as a laboratory manager (coordinator), number of times transferred in the VA system after employment as a laboratory

manager (coordinator), years of experience as a medical technologist before employment in the VA system, years of experience as a medical technologist in the VA system, years as a laboratory manager (coordinator), number of special awards received as a VA employee, prior military service (active), prior military service (reserve), service branch, job title while in the service, GS level at the time of employment as a laboratory manager (coordinator), GS level at the present, age in blocks of years (age bracket 20-30, 31-40, 41-50, 51-60, over 60 years), and gender (see Appendix B).

There were 172 research packets mailed, one to each VA medical center. Follow-up telephone calls were made to all VA medical centers during the two-month period following the mailing. There were 75 completed packets returned, and 23 packets were returned where no laboratory manager position existed. This resulted in a response rate of 75 packets returned out of a corrected total population of 149, or 50.33%. Babbie (1973) found that a 50% response rate from a questionnaire was adequate for analysis and reporting.

Statistical Procedures

The data were analyzed using the Statistical Analysis System (SAS) (Helwig, 1978). Results were reported as percentages, ranges, means, or frequencies as appropriate. The researcher also used the chi-square statistic because of the nonparametric nature of the management style distribution and because the theoretical (expected)

frequencies proposed by Reddin (1970) in the general population of managers and the frequencies observed by the researcher made this the most appropriate method of analysis. The data do not fall in a normal distribution.

Outline of the Study

Chapter II contains a review of appropriate literature and research. The data are analyzed in Chapter III. Chapter IV includes a summary of the study, conclusions reached, and a discussion of the results.

CHAPTER II
REVIEW OF LITERATURE AND RESEARCH

A Historical Approach to Administrative Theories

Since the beginning of the industrial revolution, managers have attempted to make the workplace--shop, department, or business--operate as efficiently and effectively as possible. Taylor (1911) was educated as an engineer and was associated with the scientific management approach to administration. His main contributions to the workplace were his attempt to get the worker to fit the job and his efforts to pay the worker on a piece rate rather than an hourly wage. This, according to Taylor, would result in greater output from the employees, which would increase the efficiency of the shop.

Weber (in Blau, 1956) was concerned with the efficiency and effectiveness of organizations. He developed the bureaucratic model to increase the efficiency and effectiveness of organizations. His model consisted of four basic characteristics: a hierarchy of authority, impersonality, a system of rules, and specialization (Blau, 1956).

Several researchers have studied the elements of management. These are the functions a manager performs in the formal organization. Foyol (1949) developed the basic functions of management: to forecast and plan, to organize, to command, to coordinate, and to control.

According to Kimbrough and Nunnery (1976), the transitional period began about 1930 and continued into the 1950s. In the transitional period, social scientists were concerned with human behavior and people and their relationships in organizations.

Mayo (1933) has been credited with founding the human relations movement and industrial psychology. The human relations movement was based on some long-term experiments conducted by Harvard University scientists at the Hawthorne, Illinois, plant of Western Electric. The studies consisted of observing women assembling telephones and the social and informal organizations that resulted, observations of a 14-member switchboard assembly team and their informal organization and corresponding social behavior, and interviews with several thousand employees over a three-year period. Mayo found that the piece-rate payment system was affected by the social norms of the group. The informal groups determined individual output. Social sanction was given to rate-breakers, who performed too well, and laggards, who performed below the norms of the group. The group felt that if the group produced too much as a whole, some of them would lose their jobs since management would perceive it needed fewer employees.

Follett (1924) thought that all organizational problems were basically human relations problems. In taking this approach, she ignored the contributions of scientific management to administration.

Follett theorized that organizational coordination was the key to an efficient and effective organization. Follett developed four organizational principles of coordination: coordination by direct contact of the responsible people concerned, coordination in the early stages, coordination as the reciprocal relating to all the factors in a situation, and coordination as a continuing process.

Barnard (1938) was one of the first writers to define "effectiveness" and "efficiency" in organizational terms. Barnard thought that effectiveness was nonpersonal and efficiency was of a personal nature. Barnard theorized that the goals of the organization must be of sufficient personal satisfaction for the employee to continue to accomplish these goals.

Present Era of Administration

One of the most popular management concepts of the 1965 to 1985 period was the projecting of theories concerning the interaction of relations-oriented and task-oriented management. These theories combined Taylor's (1911) scientific management theories, which concerned the tasks to be performed, and Follett's (1924) and Mayo's (1933) theories concerning the relationships among coworkers, and those between workers and management.

Relations-Oriented and Task-Oriented Management

Two-dimensional theories of management combined two points of view (group goals and personal needs). Managers who were primarily

concerned with the group's goals were classified as task-oriented. Blau and Scott (1962) found that task-oriented managers were more likely to keep their distance psychologically from their followers and were seen as more aloof and cold. McGregor (1960) found that task-oriented managers unable to trust subordinates, usually manifested in close, controlled supervision.

A second group of managers were more concerned with an interpersonal approach and tried to maintain cordial and supportive attitudes toward followers. These leaders were relations-oriented managers. Blake and Mouton (1964) described this type of manager as one who has concern for people. McGregor (1960) found that these leaders had a sense of trust in their followers and therefore had less need to give strict supervision to workers. Investigators have found that subordinate performance influences supervisor behavior. Barrow (1976) found that increasing subordinate performance in a laboratory setting resulted in the manager becoming more supportive and decreasing subordinate performance caused the manager to be more task oriented. Shartle (1934) suggested that effective supervisors excelled in the ability to interact effectively and were interested in people, but did not necessarily excel in technical skills.

Management in the business and industrial sector has generally supported task-oriented research. Rubenowitz (1962) found that higher management considered task-oriented supervisors more effective than

relations-oriented supervisors. However, May and Lombard (1944) studied the personnel of an aircraft assembly factory and found fewer turnovers and less absenteeism when leaders devoted much of their time to facilitating team members and helping to resolve personal problems. Likert (1977) found that businesses usually become task oriented during periods of recession or in other times when profits fall.

Maslow (1954) suggested that people are usually dominated by their unsatisfied needs. He found that those unsatisfied needs shape behavior and must be satisfied in this order: physiological, safety, belongingness, love, esteem, and self-actualization. As one need was satisfied the next emerged, although two needs could overlap. The lower-order needs must be satisfied before the higher-order needs can be met. The theory was useful to managers because it explained subordinate psychology concerning expectations and why monetary reward was not always the best motivating factor for productivity and retention. Reddin (1970) criticized Maslow's explanation that behavior was based solely on inner needs without taking the situation into account.

McGregor (1960) saw a basic conflict between the needs of the worker and those of the organization. McGregor's theory X and theory Y were two sets of assumptions he said managers have about employees. According to theory X, work is inherently distasteful, most people prefer to be directed, have little desire for responsibility and are

not basically ambitious. Most people are not creative and motivation arises only from Maslow's lower-order needs, physiological and safety. Workers have to be closely controlled and coerced to achieve organizational goals.

As McGregor (1960) expressed theory Y, work is as natural to people as play, if the proper conditions exist. People have the ability for self-control and the need for responsibility. The capacity for creativity in solving organizational problems is widely distributed in people. Motivation occurs at the affiliation, esteem, and self-actualization levels just as it occurs in physiological and security levels. Workers can be creative and self-directed at work if properly motivated.

Theory X led managers to centralized decision making, tight control procedures, and extreme status and power differences. This assumption implied that people were motivated only by punishment and material gain. Reddin (1970) equated his autocrat style with theory X and his executive and developer styles with theory Y.

Blake and Mouton (1964) developed the managerial grid theory, which was based on a five-grid style describing leadership. The managerial grid consisted of a two-dimensional grid, with management styles plotted by the criteria "concern for people" versus "concern for production." Concern for people was plotted on the "Y" axis while concern for production was plotted on the "X" axis. The scale for

these concerns ranged from one to nine. The number one represented minimum concern, five represented intermediate or average amount of concern, and nine represented maximum concern. A manager who is nine on "concern for production" and one for "concern for people" would be an authority-obedience style manager (pp. 10-20). Efficiency in operation results from averaging conditions of work in such a way that the human element interferes to a minimum degree.

Blake and Mouton (1967) later introduced a three-dimensional model. The third dimension of the managerial grid was represented by the thickness or depth of a given style and how long the managerial style was maintained in any given situation of interaction, particularly under pressure, stress from tension, frustration, or conflict. Blake and Mouton contributed greatly to the field of humanistic management. For example, by using numbers instead of names, they prevented cross-cultural misinterpretation and increased the facility with which the basic idea could be grasped.

McClellan (1962) developed his N-ACH or Need for Achievement theory. Individuals with a high N-ACH are more self-motivated and are more concerned with knowing they have done well than with the rewards that success brings. They receive rewards from accomplishment rather than from money or praise. These individuals set themselves achievable and realistic goals with some "stretch" built in. They prefer situations that they can influence rather than situations where

chance has large influence on the outcome. High N-ACH persons are most effective only when the situation allows them to get ahead by their own effort, otherwise they might not be effective.

Likert (1967) developed his four organizational philosophies: Systems One, Two, Three, and Four. System One managers usually have no confidence or trust in subordinates. Most decision making and goal setting are done at the top. Subordinates are treated in one of two ways--with threats and punishment or with rewards. The control process centers in upper management. An informal organization generally develops which opposes the goals of the formal organization.

System Two managers have condescending confidence and trust in subordinates such as in the master and servant relationship. Most of the major decisions are made at the top and organizational goals are determined by the status leaders, though some decisions are made at lower levels in a prescribed framework. Some middle-level managers have some input into the control process. Rewards and punishment, whether actual or potential, are used to motivate workers.

System Three managers have moderate but not complete trust in subordinates. Subordinates are allowed to make minor decisions at lower levels. Communication flows up and down the organizational channels. Occasional punishment, rewards, and some involvement are used to motivate. The system is characterized by a fair amount of trust and confidence and a moderate amount of superior-subordinate

interaction. A feeling of responsibility is pervasive in the organization. An informal organization could develop and it might be either partially supportive or partially resistive to the goals of the organization.

System Four managers are seen as having complete trust and confidence in their subordinates. Decision making is widely distributed throughout the organization. Communication flows up and down the hierarchy but also among peers. Workers are involved in developing economic rewards, goal setting, and method improvements, and in evaluating progress toward organizational goals. Superior-subordinate interaction is frequent and extensive in the organization, which elicits a high degree of trust and confidence. The informal and formal organizations are often one and the same and all social forces support efforts to achieve organizational goals. Reddin (1970) criticized Likert's theory as "a collection of interacting people without a job to do" (p. 197).

Herzberg (1966) developed his Two-Factor theory of motivation comprised of hygienes and motivators. Herzberg believed that modern industrial man has two groups of needs that are independent of each other and affect behavior in different ways. He theorized that dissatisfaction is most likely to arise from elements in the job itself. The environmental or hygiene factors are policies and administration, supervision, working conditions, interpersonal

relations, money, status, and security. Changes in hygiene factors will lower dissatisfaction but not increase satisfaction. Hygiene factors are extrinsic to the job or technology, not intrinsic to it. The motivators or job factors are achievement, recognition for accomplishment, challenging work, increased responsibility, growth, and development. Changes in the motivator factors could produce satisfaction, and motivate people to higher performance. Herzberg's strategy in organizational development was to induce management to bring about these kinds of changes.

Fiedler (1967) developed his Leadership Contingency Model, which is based on the situation and effectiveness. The key situational elements or dimensions are seen as power of the leader, degree of structure of the task, and leader-member relations. Fiedler's most favorable situation comprises high position structure, high task structure, and high leader-member relations. A hard-driving popular manager would be an example of his most favorable situation. His least favorable situation would be a disliked leader in a voluntary organization. Fiedler (1966) distinguished between leadership style and leader behavior, maintaining that style was indicative of a person's basic personality structure, of that person's needs and motives, and was rather stable, whereas behavior changed as the situation changed.

Most researchers agree that there is no "best" management style, but rather a best style for a particular situation. This is reflected

in several theories, including Fiedler's leadership Contingency Model, Reddin's 3-D Model, and Hersey and Blanchard's Tri-Dimensional Model. These researchers attempted to measure the task and relation orientation as well as the effectiveness dimension, which was situation dependent. These models are similar. The main difference between the Tri-Dimensional Model of Hersey and Blanchard's and Reddin's 3-D Model was that Hersey and Blanchard were concerned with leadership styles both inside and outside the formal organization. Reddin limited his instruments to the organizational setting (Hersey & Blanchard, 1969).

Hersey and Blanchard (1969) developed the Leader Effectiveness and Adaptability Description (LEAD), a test that measures a person's self-perception as a leader. Hersey and Blanchard (1969) divided the leadership behavior or style into four quadrants. Quadrant one consisted of a high task, low relation style; quadrant two consisted of high task, low relation style; quadrant three consisted of low-task, high relations style; quadrant four consisted of low-task, low relations style. The theory incorporated no "best" leadership style. The styles are based in the appropriateness of the style to the situation (p. 27).

Management Effectiveness

One of the major determiners of management effectiveness is leader behavior. According to some theorists, leader or management

style and effectiveness are not directly correlated with each other, thus the theories and measures of management or leader effectiveness are somewhat inadequate (Miskel, 1974). Leader effectiveness and management effectiveness are not synonymous, since leadership is only one aspect of a manager's job (Fiedler & Chemers, 1974).

Hersey and Blanchard (1969) found that the majority of effective managers had interpersonal skills, could communicate adequately, create motivation in workers to increase productivity, and diagnose problem situations. They also found that a manager could be ineffective but successful if the workers cooperated because of the power position the manager held. To be productive over a long period of time, the manager usually had to be successful and effective.

Campbell, Dunnette, Tawler, and Weick (1970) found that research on management effectiveness had focused on the process, the product, and the person. They pointed out that Fiedler (1967) and Reddin (1970) focused on productivity, achievement, or output as determinants of effective management. They found in their own research that profits and organizational efficiency were determinants of effectiveness.

Halpin (1966) determined that one of the main problems was finding "objective and dependable criteria of administrative effectiveness" (p. 69). Halpin also found that leadership style was situation dependent in that the same leader acted differently with different groups, making the management style difficult to evaluate.

Drucker (1967) theorized that effectiveness is the specific technology of the knowledge worker within the organization. Drucker is also a management-by-objective advocate.

Reddin (1967) proposed that for leadership-style typing to be useful, the instrument must include a variety of styles that are judged effective or ineffective depending on the situation in which the style is used. Reddin developed his 3-D theory on the basis of effectiveness of leadership style in a given situation.

Research on Management Styles

Investigators conducted the following studies on management styles, using several instruments and arriving at remarkably similar findings.

Jones (1968) studied the management styles of principals of selected schools in New Mexico and Texas and found that styles were not significantly related to such factors as years of experience, instructional level of the school, median board member's tenure, or superintendent's tenure. He found that most principals used an autocratic style of management, but were more humanistic than materialistic. The backup styles varied from district to district.

Wollam (1974) considered the management styles of community college presidents and faculty perceptions of educational concepts. He used two instruments, the Management Style Diagnosis Test and the Semantic Differential. The sample consisted of six college presidents

and 308 faculty members. He found significant relationships between the management style of college presidents and faculty perception of concepts of individualized instruction, open admissions policy, faculty governance, and accountability. Faculties whose presidents displayed effective management styles had a higher mean response to a larger number of concepts than those faculties whose presidents used ineffective styles.

Stine (1975) studied the perceptions of the relationship between the organizational climate of elementary schools and the management styles of the principals, using the Styles of Management Inventory (SMI). Stine found no significant relationship between managerial style and organizational climate.

Cayon (1975) analyzed the management styles of academic deans at the Agricultural and Technical College in the State University of New York. He used the Management Appraisal Instrument and found that a set of behaviors indicative of low task and low concern for people emerged as the preferred leadership style as perceived by subordinates. The deans were perceived by their immediate subordinates as significantly underusing the team approach concerning philosophy, planning, and evaluation. On the other hand, the institutional presidents rated the academic deans as moderate in the management process in terms of perceived emphasis on high structure and high consideration.

White (1976) also studied the management styles of college administrators. She found a significant difference in the way they perceived their own management styles and the way their subordinates perceived their styles. College administrators rated themselves as having a higher concern for people than their subordinates rated them.

Sherman (1976) reported that the perceived management style of supervisory personnel in public schools was related to the perceptions teachers had of the quality of interpersonal relations between teachers and supervisors. The quality was seen to differ significantly under different management styles. The conclusion reached was that when teachers saw that they had limited opportunities to exercise self-direction and self-control and to participate in setting goals and evaluating the achievement of those goals, the quality of interpersonal relations between teacher and supervisory personnel was negatively affected. When teachers felt that management strategies of supervisory personnel provided opportunities for teachers to participate in the process of supervision, the quality of interpersonal relations was positively affected.

Leahey (1977), working with selected public school superintendents in Ohio, examined their management styles as perceived by the superintendents and their subordinate administrators. He used a profile of organizational characteristics developed by Likert. The selected superintendents perceived themselves as operating within

Likert's System Three, or consultive management style. This style allowed for subordinate decision-making participation at least levels of input and consultation. The selected subordinate administrators also perceived their superintendent as operating in System Three or the consultive management style. Leahey examined personal characteristic differences between the superintendents and subordinate administrators including gender, age, and years of experience. Only gender appeared to significantly influence the perceptions of each group.

Lowney (1977) investigated the relationship of management styles of school superintendents and the presence or absence of management by objective (MBO) in the school district. He used the Managerial Philosophies Scale to measure the superintendents' management philosophy and found no significant relationship between management styles and the presence or absence of MBO in the school district.

Sanchez (1979) analyzed the management styles of division chairs in selected Texas public community junior colleges. She used the Styles of Management Inventory based on the Managerial Grid of Blake and Mouton (1965) and found no significant relationship between management style and such personal characteristics as gender, age, or previous experience; institutional characteristics such as location, urban or rural classification, high or low Hispanic enrollment, and perceived decision-making structure.

Hennigar (1979), using the Styles Management Inventory developed by Hall, Harvey, and Williams, found a relationship between management style and perceived receptivity to change in selected public school administrators in Maine. Managers who saw themselves as having high concern for production were more receptive to change than were managers who saw themselves as having a low concern. Managers who showed a high concern for people were more receptive to change than those who showed a low concern. In education, managers with high concern for people and production were more receptive to change than managers with low concern.

Appleby (1979) studied motive strength and leadership styles as predictors of managerial effectiveness in selected community college administrators. The four indicators of motive strength included the need for power, inhibition, the need for affiliation, and the need for achievement. These, along with leadership style and such biographical information variables as gender, age, degrees held, and years of experience in administration, which were used as attribute variables, constituted the independent variables employed in describing managerial effectiveness. Appleby used the Thematic Apperception Test and Adaptability Description to measure managerial effectiveness. She found that motive states and leadership style do not account for differences in managerial effectiveness, and that department heads with doctorates had the highest mean openness score. This suggested

that the relationship between the independent and dependent variables differed as a function of the administrator's position with the institution.

Powell (1980) explored the relationship between cognitive styles of educational administrators and their perceived managerial styles. He used Hill's Cognitive Style Mapping Inventory and Reddin's Management Style Diagnosis Test to identify the administrators' managerial styles. Powell did not find a significant relationship between managerial style and cognitive style. Analysis of gender differences, years of experience in educational administration and education, and types of positions in educational administration failed to provide sufficient data to clarify theoretical relationships of any consequence between Hill's theory and Reddin's theory.

Yonay (1979) studied teachers' personality traits and their preferences for managerial styles of principals. He used the Styles of Management Inventory to determine managerial style and found no significant differences in any of the 15 personality traits among teachers who differed in their preferences for managerial styles of principals and no significant relationship between teachers' gender, age, and preferences for managerial styles of principals. Yonay did find a significant relationship between teachers' experience in teaching and their preferences for managerial styles of principals. He also found a significant relationship between levels of teaching

(i.e., elementary, middle school, and secondary) and teachers' preferences for managerial styles of principals.

Hare (1981) explored the managerial leadership styles in selected private higher educational institutions in the Washington, DC, metropolitan area. He found no relationship between management styles and personal/professional characteristics of administrators, and no difference between management styles as perceived by self, superiors, and subordinates.

Several investigators have examined managerial style in the industrial setting. Van Bleckom (1981) analyzed the effects of managerial style on measures of productivity. Managerial attitudes, market characteristics, size of work unit, and employee attitudes served as predictors for productivity. He found that managers who subscribed to the process of setting and implementing a system of goals and standards were associated with branches that displayed the greatest gross income, but market variables were the most predictive of the variables Van Blerkom explored in the study.

McDowell (1972) studied managerial styles and managerial needs in industry. He found participative management to be more productive, with lower costs, less waste, less absenteeism, and lower employee turnover, than authoritative management. He also found that authoritative managers consistently evidenced more need dissatisfaction than did participative managers.

The literature contains two studies of leadership styles in nursing. Radtke (1978) studied the effectiveness of hospital-diploma, community college, and university prepared head nurses. She measured leadership styles with the Least Preferred Coworker Scale and found that leadership effectiveness was more a function of style than of the specific nursing education program the head nurse had completed.

Beck (1976) compared personality types, using the Myers-Briggs Type Indicator, and leadership styles, including the Management Style Diagnosis Test (MSDT), for a group of nurses employed at a North Florida hospital. The leadership styles and personality types were not significantly related. Based on MSDT, nurses in supervisory positions were more task oriented than were the floor staff nurses.

The studies cited above concerning personal characteristics and demographic data as predictors (such as age, gender, degrees held, and management position) of managerial style demonstrated that these predictors are not strong. The studies also showed that these personal predictors do not yield consistent results. One of the most widely used predictors of managerial style is the Management Style Diagnosis Test (MSDT) developed by Reddin in 1970.

The Management Style Diagnosis Test (MSDT)

The MSDT, designed by Reddin (1964) and used in this study, is a 64-item, forced-choice, paired-item, self-reported questionnaire. The test, based on the 3-D theory, was developed for managers and requires

approximately 30 minutes to answer and score. The three dimensions measured by the instrument are task orientation, relations orientation, and the effectiveness of the management style used. Effectiveness was situation dependent. When managers directed their own or their subordinates' efforts, the managers' behavior was task oriented and was characterized by initiating, organizing, and directing. When a manager has personal job relations, the manager's behavior is relations oriented as is characterized by listening, trusting, and encouraging. In most organizations, managers usually emphasize task orientation and at other times emphasize relations orientation. The degree that a manager is task oriented is not related to the degree in which the manager is relations oriented. The two factors are independent of each other.

Managerial effectiveness occurs when the style the manager uses matches the requirements of the situation. The four effective styles are developer, executive, bureaucrat, and benevolent autocrat. Reddin (1970) called the four less effective styles missionary, compromiser, deserter, and autocrat.

The MSDT measures a manager's perception of his or her own managerial style in the present job situation. The MSDT tells the managers what style they describe in the jobs they currently hold. The 64 items that make up the MSDT paired each style with all eight styles. The test provides the manager 64 opportunities to choose one

style over all the others. The MSDT is constructed so that each of the eight styles will emerge approximately the same number of times in a large group of managers that represents a diverse sample of managers and levels.

The questions on the MSDT are paired "Statement A" and "Statement B." Managers choose the most appropriate statement to their management style in the situation in which they are presently employed. A pair of statements on the MSDT is as follows (Reddin, 1974):

> A. He would not hesitate to hire a handicapped worker if he felt he could do the job.
> B. He overlooks violations of rules if he is sure that no one else knows of the violations. (p. 6)

Statement A is representative of an effective manager with a high task orientation and a high relations orientation. The manager is concerned about the task to be accomplished, the person must be qualified and do the job adequately, but the manager is also concerned about people enough that he or she would hire a handicapped person. This manager is effective and probably of the executive style. The second statement (Statement B) is representative of a less effective manager, probably of the deserter style.

When the style synthesis of a group of managers of an organization is analyzed, the analysis provides important information about the group as a whole and about its organizational philosophy. The MSDT was administered to 236 middle managers who attended four

management courses at Queens University in Canada. The courses ranged from one to three weeks. Investigators calculated the percentage of occurrence of each style synthesis. The test was constructed so that in the general population of managers 12.5% would fall in each of the eight styles. Of this group of managers the executive style made up 25%, the deserter style 4%, the bureaucrat style 6%, and the other five styles, 11-16%. This distribution fitted the expectations held about selected middle managers who attended college or university seminars (Reddin, 1970).

Reddin's 3-D Theory

Reddin (1970) proposed a theory based on three dimensions: task orientation, relations orientation, and managerial effectiveness, which was situation dependent. Reddin (1970) called this the "3-D theory" because of the three-dimensional model, compared to Blake and Mouton's (1964) and Hersey and Blanchard's (1969) two dimensional models, which included only task orientation and relations orientation. Reddin believed that the two main elements in managerial behavior concern the task to be accomplished and relations with other people. Reddin (1970) suggested that managers sometimes emphasize the task to be accomplished and sometimes relations between people, depending on the specific situation. He measured managerial effectiveness by the extent to which managers achieve the output requirements of their positions. Reddin's main contribution to

management theory was his idea that managerial effectiveness does not lie in the manager's behavior in terms of task orientation or relations orientation, but is situation dependent. No particular amount of task orientation or relations orientation guarantees managerial effectiveness. According to Reddin (1970), effectiveness results from the manager's style appropriate to the situation in which it is used.

The 3-D model consists of eight management styles: four that are effective and four that are less effective. The four effective styles are executive, developer, bureaucrat, and benevolent autocrat. The four less-effective styles are autocrat, compromiser, deserter, and missionary.

Managers who use the executive style use a high task orientation and a high relations orientation in situations where such behavior is appropriate and therefore effective. Reddin (1970) hypothesized that managers who use the executive style are perceived as good motivators who set high standards, treat everyone somewhat differently, and prefer team management.

Managers who use the developer style of management use a high relations orientation and a low task orientation in situations where such management behavior is appropriate and is therefore effective. Reddin (1970) found that managers who use the developer style are perceived as having implicit trust in people and as being primarily concerned with developing them as individuals.

Managers who use the bureaucrat style use a low task orientation and a low relations orientation in situations where such behavior is appropriate and therefore effective. Reddin (1970) found that managers who use the bureaucrat style are perceived as being primarily interested in rules and procedures for the rules and procedures, as wanting to control the situation by use of their rules and as being conscientious.

Managers who use the benevolent autocrat style use a high task orientation and a low relations orientation in situations where such behavior is appropriate and therefore effective. Reddin (1970) suggested that managers who use the benevolent autocrat style are perceived as knowing what they want and how to obtain it without creating resentment.

The remaining four management styles--autocrat, compromiser, deserter, and missionary--are less effective because they are used by managers in situations where they are not appropriate. Managers using the autocrat management style use a high task orientation and a low relations orientation in situations where such behavior is inappropriate and therefore less effective. Reddin (1970) found that managers who use the autocrat management style are perceived as having no confidence in others, as being unpleasant, and as interested only in the immediate task.

Managers adopting the compromiser management style use a high task orientation and a high relations orientation in situations that require a high orientation to only one or neither and their behavior is inappropriate and therefore less effective. Reddin (1970) found that managers who use the compromiser management style are perceived as being poor decision makers who allow various pressures in the situation to influence them too much, and avoid or minimize immediate pressures and problems rather than long-term production.

Managers who use the deserter management style have a low task orientation and low relations orientation in situations where such behavior is inappropriate and therefore less effective. Reddin (1970) proposed that deserters are perceived as being uninvolved, passive, or negative.

Managers who use the missionary style have a high relations orientation and a low task orientation in situations where such behavior is inappropriate and less effective. Reddin (1970) found that managers who use the missionary management style are perceived as primarily interested in harmony.

According to Reddin's (1970) model, only one leadership style is appropriate and therefore effective in any specific situation. Each style has a situation in which it is appropriate. The remaining seven management styles are inappropriate in that situation and are therefore less effective. The theory is based on eight management

styles, four which are managerially effective and four which are managerially less effective because they are not appropriate to that particular situation. There are two management styles which are low in task orientation and low in relations orientation, the deserter style and the bureaucrat style. If the situation requires a manager who is low in task and relations orientation, then the style is appropriate and the manager would be a bureaucrat. If the situation requires a different management style, then the manager is using an inappropriate management style and would be classified as using the deserter style (Reddin, 1970).

This pattern follows in the remaining management styles. The management styles for high relations orientation and low task orientation are developer and missionary. If the situation requires this style, the manager is a developer. If the style is inappropriate for the situation, the manager is a missionary (Reddin, 1970).

The four remaining styles are high in task orientation. If the situation requires a manager who uses low relations orientation and high task orientation, the manager would be classified as a benevolent autocrat. If the situation requires another style then the manager is less effective and would be classified as an autocrat. The two remaining styles use a high relations orientation and a high task orientation. If the situation requires a manager of this type, the manager is an executive style. If the style is inappropriate to the

situation, the manager would be less effective and would be classified as an autocrat.

Follett, Fiedler, Likert, and Stogdill (in Reddin, 1970) developed the basis for situational theory which focuses on the development of the situation by managers. The situational theorists recognized the complexity of the relationships among production, satisfaction, and morale that some researchers consider to be simple and thus take for granted.

Hodgetts (1975) found that the 3-D theory brought together the concepts of task orientation and relations orientation as dimensions of management. The 3-D theory also brought together Fiedler's Contingency theory in that the situation has a bearing on which leadership style is most effective. He also found that the use of the 3-D theory encourages leaders to be more adaptive in leadership styles used since no one style is best in all situations.

Reddin's Research on the MSDT

Heads of voluntary agencies were really not considered managers because they did most of their work with people who had power equal to theirs if not greater. In this situation, Reddin (1970) found that a high relations orientation was more effective. He found when studying voluntary agencies such as Blue Cross (Canada) and Red Feather (Canada) that 41% of the heads of voluntary agencies had developer styles with the next highest style held by 11% of the group.

Reddin (1970) analyzed the styles of 33 presidents and vice presidents of an international conglomerate that employed 100,000 people. He found that 49% used the executive style which was highly relations oriented and was effective in this situation. The next two most used styles were the autocrat at 15% and the benevolent autocrat at 12%.

Reddin (1970) tested middle managers in two pulp and paper companies. In company A, 37% of the managers were autocrats, 19% benevolent autocrats, 13% compromisers, 13% deserters, and the other 18% were divided among the four remaining styles. Company B had 28% of the missionary style, 24% developer, 18% compromiser, and 12% benevolent autocrat. The other 18% were divided among the four remaining styles. The first company was known for its "tough" organizational philosophy, a fact that was consistent with the high percentage of managers with autocrat style. The second company was founded by a related manager who had a high relations and low task orientation. This firm had been consistently in the lower half of financial earnings ratios for several years.

Reddin (1970) studied the management styles of two groups of military officers from three branches of the armed forces. One group consisted of 90 captains selected for advanced training. Of the captains, 32% used the benevolent autocrat management style, 28% the executive style, and 19% the developer style. The remaining 21% were

divided among the remaining five styles. The other group was lieutenant colonels. Seventy-three lieutenant colonels took the MSDT during a 10-day refresher course. The results were as follows: 32% executives, 20% benevolent autocrats, 15% autocrats, 12% compromisers, 10% developers, 8% bureaucrats, 2% deserters, and 1% missionaries. An important difference between the two groups was the higher percentage of less effective styles, especially autocrats and compromisers, among the lieutenant colonels than among the captains. Reddin (1970) explained this by the lieutenant colonels' earlier experience. All the lieutenant colonels had participated in World War II and some had pre-World War II military experience whereas few of the captains had either experience.

In 1970, Reddin tested 78 industrial relations managers at a university seminar at Queens University in Canada. The results were as follows: 2$% executives, 21% developers, 14% benevolent autocrats, 12% autocrats, 10% compromisers, 8% bureaucrats, 6% missionaries, and 5% deserters. Reddin tested a second group of industrial relations managers the following year and the percentages matched the first group within plus or minus 2%.

Reddin (1970) had the test translated into French and Japanese. Using North American adjustment factors, he found that a high proportion of less effective styles, especially autocrat, were produced on both versions. This diagnosis held for the English

version as used in India but not for the same in the United Kingdom, Australia, New Zealand, and South Africa, where normal distributions were obtained.

Review of Health Related Studies

Most of management style studies have been in the educational and industrial settings. A few researchers have studied management styles among nurses, but this investigator found no studies of management styles of medical technologists or laboratory managers.

Studies of Leaders in the Health Professions

The writer found a few studies in which personal and demographic data were compared with managerial style, but the number was small, and most were not related to the health professions. None of the studies contained demographic data on medical technologists or laboratory managers.

Chapter Summary

Chapter II presented an overview of the historical development of leadership and management theories. During the traditional period, the bureaucratic model was developed by Weber. Taylor (1911) developed the piece rate payment system to replace the hourly wage and developed the idea that the work place should fit the worker to accomplish the job as efficiently as possible.

During the transitional period, Mayo and Follett introduced human relations into the workplace. Barnard theorized that the goals of the

organization must be of sufficient personal satisfaction for the employee to continue to accomplish these goals.

The multi-dimensional theories of management combined task-oriented, relations-oriented, and, later, effectiveness measured. Blake and Mouton (1964), McGregor (1960), Likert (1977), Herzberg (1966), and Reddin (1970) were proponents of the multi-dimensional models.

CHAPTER III
ANALYSIS OF DATA

The study was designed to determine, based upon responses to Reddin's Management Style Diagnosis Test, the management styles and demographic characteristics of Veterans Administration Medical Center laboratory managers, the proportion of effective to ineffective managers in the system, and characteristics of effective and ineffective managers. To obtain this purpose the following specific questions were explored.

1. What management style categories do Veterans Administration Medical Center laboratory managers select as being most descriptive of themselves?
2. What percentage of laboratory managers respond to the Management Style Diagnosis Test (MSDT) in such a way that they are characterized as effective as opposed to less effective?
3. What are the demographic characteristics of the effective versus the less effective managers, as categorized by the Management Style Diagnosis Test?
4. Is the distribution of effective and ineffective managers significantly different for males and females?

5. Is the distribution of effective and ineffective managers significantly different for different age categories?
6. Is the distribution of effective and ineffective managers significantly different for those holding bachelor's and those holding graduate degrees?

Data Analysis

The data were analyzed using the Statistical Analysis System (SAS) (Helwig, 1978). Results were reported as percentages, ranges, means, or frequencies as appropriate. The chi-square statistic was also used because of the nonparametric nature of the management style distribution and because the theoretical (expected) frequencies proposed by Reddin (1970), which are based on the laws of statistical probability, in the general population of managers and the frequencies observed by the writer made this the most appropriate method of analysis. The data did not fall in a normal distribution. Reddin (1970) proposed that if enough managers were sampled, an equal number would fall in each of the eight management styles. Thus, if the data were distributed normally or equally, according to Reddin, there would be 12.5% of the VA laboratory managers in each of the eight management styles measured by the Management Style Diagnosis Test, or that if a large enough population of managers were sampled, one might expect an even distribution through all types.

Of the 172 research packets mailed to each VA medical center and potential laboratory manager, 75 completed packets were returned and

23 packets were returned from VA medical centers where no laboratory manager position existed. This reduced the potential VA laboratory managers from 172 to 149. The 75 completed packets returned represented a 50.33% return rate. The writer used these 75 completed packets, which consisted of a completed Management Style Diagnosis Test and a completed Personal Data Questionnaire, as the basis for the study.

The study sample consisted of 31 (41.33%) females and 44 (58.67%) males. Table 1 depicts the frequency of management styles in the sample. These include the four effective management styles of developer, executive, benevolent autocrat, and bureaucrat and the four less effective management styles of deserter, missionary, compromiser, and autocrat. The total sample studied consisted of 75 VA laboratory managers. According to Reddin's 3-D theory, managers should be equally divided into each of the eight management styles, four of which are effective and four of which are less effective.

One should expect 12.5% in each management style and 50% that are effective and 50% that are less effective. The expected frequency was obtained by multiplying 12.5% by the number of participants in the study which is 75. This expected frequency then is 9.38. Out of 75 laboratory managers, 9.38 should fall in each style and 50% should fall as effective styles and 50% should fall as less effective styles if the sample is distributed on the basis of chance. Note that 79.99% of the sample of VA laboratory managers studied perceived themselves, using the MSDT, as using an effective management style.

Table 1

Frequency of Management Styles in Sample

Effective Management Styles	Expected Frequencies	Observed Frequencies	Expected Percentages	Observed Percentages
Developer	9.38	34	12.5	45.33
Executive	9.38	13	12.5	17.33
Benevolent Autocrat	9.38	9	12.5	12.00
Bureaucrat	9.38	4	12.5	5.33
Subtotals	37.50	60	50.0	79.99
Less Effective Management Styles	**Expected Frequencies**	**Observed Frequencies**	**Expected Percentages**	**Observed Percentages**
Deserter	9.38	6	12.5	8.01
Missionary	9.38	5	12.5	6.67
Compromiser	9.38	3	12.5	4.00
Autocrat	9.38	1	12.5	1.33
Subtotals	37.50	15	50.0	20.01
Totals	75.00	75	100.0	100.00

The distribution of management styles in the sample is presented in Table 2. The critical value of chi square at the .05 level is 14.07. The chi-square value for the even distribution is 135.21. Thus, the MSDT results were distributed on a basis other than chance and these results were statistically significant.

Table 2

Chi-Square Distribution of Management Styles in the Sample

Management Style	Observed Frequency	Expected Frequency	(O-E)	(O-E)	$\frac{(O-E)}{E}$
Developer	34	9.38	24.62	606.14	64.62
Executive	13	9.38	3.62	13.10	13.97
Benevolent Autocrat	9	9.38	-0.38	0.14	0.01
Bureaucrat	4	9.38	-5.38	28.94	3.09
Deserter	6	9.38	-3.38	11.42	1.22
Missionary	5	9.38	-4.38	19.18	2.04
Compromiser	3	9.38	-6.38	40.70	42.12
Autocrat	1	9.38	-8.38	70.22	7.49
Total (chi-square)	75	75.00	0.00		135.21

O = Observed
E = Expected

According to Reddin's 3-D theory, if enough managers were sampled and tested, an equal number of managers would appear in each of the eight management styles. When 75 VA laboratory managers are sampled, 9.38 managers or 12.5% of the total sample should have appeared in each of the eight management styles. The columns (O-E), (O-E), and $\frac{(O-E)}{E}$ are used in the calculation of the chi-square statistic. The observed cell frequency is denoted by O, and the expected cell frequency is denoted by E.

Table 3 contains the MSDT observed frequencies for male and female VA laboratory managers. There were 44 male laboratory managers and 31 female laboratory managers included in the study.

Table 4 contains the MSDT observed and expected frequencies for effective and ineffective laboratory managers by gender. The chi-square format is used which was described previously. The chi-square value for the comparison of effective and less effective laboratory managers was 51.68. The initial value at the .05 level was 3.841. Thus there was a significant difference in the effective management styles used by male and female laboratory managers.

Table 5 contains effective management styles as percentages by gender. Reddin (1970) predicted that 50% of managers will use effective management styles and 50% will use less effective management styles. Data in Table 6 show that 74.19% of female VA laboratory

managers used effective management styles and that 86.36% of male VA laboratory managers used effective management styles.

Table 3

MSDT Observed Frequencies for Males

Management Style	Male	Female
Effective		
Developer	18	16
Executive	10	3
Benevolent Autocrat	7	2
Bureaucrat	4	
Subtotal	39	21
Less Effective		
Compromiser	2	1
Missionary	1	4
Deserter	2	4
Autocrat	0	1
Subtotal	5	10

Table 4

Management Style Related to Gender

	Male	Female	
Effective	39	21	60
Less Effective	5	10	15
	44	31	75

chi square = 51.68

Table 5

Effective Management Styles as Percentages by Gender

Gender	Percent Effective Styles Observed	Percent Effective Styles Predicted by Reddin
Male	86.36	50.00
Female	74.19	50.00

Table 6 contains the educational level by degree held before becoming a VA laboratory manager. Most (69.33%) VA laboratory managers held a B.S. or B.A. degree before becoming a laboratory manager. The two respondents holding the M.D. degrees were pathologists in laboratories where no manager other than the pathologist functioned in that role. They performed the duties of laboratory managers in their respective medical centers along with serving in their traditional role as service chief. The remainder of the laboratory managers (30.67%) had graduate degrees at the time of becoming a laboratory manager.

Table 6

Laboratory Manager by Degree Held Before Becoming Manager

Degree	Frequency	Percentage
B.S. or B.A.	52	69.33
Graduate	23	30.67
Totals	75	100.00

Table 7 includes the educational level of the laboratory managers. Many of the laboratory managers were awarded an advanced degree while performing as a laboratory manager. Twenty-one laboratory managers (28%) were awarded graduate degrees after assuming

the title of laboratory manager. The number of M.D.s and Ph.D.s remained the same as of January, 1984. The number of laboratory managers with advanced degrees increased from 21 (28.00%) to 37 (49.33%) from the time of selection as a laboratory manager until January, 1984.

Table 8 consists of laboratory managers identified as effective and less effective managers using the MSDT compared by present educational level (from Table 7). The chi-square value was 1.284 and the critical value was 3.841. Thus the difference in educational level in relation to management style was not statistically significant.

Table 7

Laboratory Managers by Degree as of January, 1984

Degree	Frequency	Percent
B.S. or B.A.	38	50.67
Graduate	37	49.33
Total	75	100.00

Table 8

Effective Management Styles by Level of Education as of January, 1984

	Baccalaureate	Graduate	
Effective	32	28	60
Less Effective	6	9	15
	38	37	75

chi square = 1.284

Most managers (82.66%) did not transfer from one VA medical center to another. This included respondents before and after becoming laboratory managers. This was surprising because one of the few ways to get an increase in salary is to transfer from a smaller VA laboratory to a larger VA laboratory where the managerial responsibilities are increased along with an increase in GS salary level.

The number of years as a medical technologist before becoming a laboratory manager ranged from less than 1 year to 27 years, with a mean of 5.29 years. The frequency and percentage of each level are given in Table 9.

Table 9

Years as Medical Technologist

Years	Frequency	Percentage
Less than 1	23	30.70
1 to 5	27	36.00
6 to 10	13	17.32
11 to 15	2	2.66
greater than 20	10	13.32

The number of years employed in the VA system ranged from 1 to 29, with a mean of 12.43 years. The frequencies and percentages are listed in Table 10.

The numbers of years the participants had been employed as laboratory managers are listed in Table 11. The range was from 1 to 34 years, with a mean 7.8 years. Some of the laboratory managers were laboratory managers before obtaining employment in the VA system. A few were laboratory officers in the Armed Forces and a few others came from business or other hospital systems.

Table 10

Years Employed in VA System

Years	Frequency	Percentage
1 to 5	15	20.00
6 to 10	17	22.67
11 to 15	16	21.33
16 to 20	15	20.00
over 20 years	12	16.00
Totals	75	100.00

Table 11

Years As Laboratory Manager

Years	Frequency	Percentage
1 to 5	38	50.67
6 to 10	17	22.67
11 to 15	8	10.67
16 to 20	7	9.33
over 20	5	6.66
Totals	75	100.00

In the VA medical centers, exceptional employees are given special awards that amount to a General Service (GS) step increase for superior performance. Since most of these laboratory managers were chosen from working medical technologists who demonstrated management potential, they would logically have been given special awards. This proved to be true, with respondents having received a mean of 3.05 special awards. One individual received 20 special awards. The frequencies and percentages are listed in Table 12.

Table 12

Special Awards Received by VA Laboratory Managers

Special Awards	Frequency	Percent	Effective Management Styles
0 to 1	22	29.33	80.26%
2 to 4	40	53.34	80.33%
More than 5	13	17.33	65.33%
Totals	75	100.00	

The reported number of years of military service was unexpected to the writer. The federal system of employment is supposed to give employment preference to veterans, especially since the Veterans

Administration system was specifically authorized for the care of veterans. More than half (53.33%) of the laboratory managers were not veterans. None of the female laboratory managers had had military service, another surprise to the writer. The mean years of active military service was 2.24 years. Frequencies and percentages are given in Table 13.

Table 13

Years of Active Military Service

Years	Frequency	Percentage
0	40	53.34
1 to 4	26	34.67
5 to 10	5	6.67
11 to 15	0	0.00
16 to 20	2	2.66
over 20	2	2.66
Totals	75	100.00

Most of the laboratory managers had not had military reserve duty. Those who had had reserve duty were an even smaller group than those who had had active duty. Only 18.6% of the laboratory managers

had had military service in the reserves. Table 14 contains the frequencies and percentages for military reserve duty.

Table 14

Years of Reserve Military Service

Years	Frequency	Percentage
0	61	81.34
1	3	4.00
2	4	5.34
3	0	0.00
4	2	2.67
5	0	0.00
6	0	0.00
7	1	1.33
8	1	1.33
9	1	1.33
10	1	1.33
14	1	1.33
Totals	75	100.00

The distribution among branches of military service in which the laboratory managers participated was also unexpected. The Army is the largest military service branch, the Air Force is second, the Navy third, and the Marines, Coast Guard, and Public Health Service are the smallest (personal communication, Col. John Trout, May 6, 1984). The largest number of laboratory managers came from the Air Force, followed by those from the Army. The frequencies and percentages of military service are listed in Table 15.

Table 15

Military Service Branch of Laboratory Managers

Branch	Frequency	Percentage
No military service	40	53.34
Air Force	12	16.00
Army	11	14.67
Navy	9	12.00
Coast Guard	1	1.33
Marine Corps	1	1.33
Public Health Service	1	1.33
Totals	75	100.00

The former military occupations of VA laboratory managers were mostly medically oriented. Out of 35 laboratory managers who were in the military, 27 (80%) had medical military occupational skills. These skills ranged from medical supply to surgeon.

The non-medical military occupational skills possessed by the remaining laboratory managers consisted of a wide range of occupations. They ranged from baker and tank commander to Nuclear, Biological, and Chemical Warfare (NBC) specialist and intelligence officer.

Most of the medically related skills were of the enlisted type, and most of the enlisted military personnel later graduated from college and became medical technologists.

GS levels before becoming laboratory managers are listed in Table 17. The mean for this group was 9.55. The wide range for GS level was due to (a) the difference in GS levels of laboratory managers because of the difference in sizes of the laboratories and the number of employees supervised and (b) the age of the laboratory manager. GS increases have been the result of the demands and educational levels of the positions. Two decades ago, a medical technologist needed only a two-year college education. In most states today, a medical technologist needs three years of formal education and a year of internship as the minimum educational preparation.

The GS levels of laboratory managers at the time of responding had a mean of 11.10, and these are listed in Table 17. The percentage

of effective management styles used are presented in the table because this was the GS level at the time of taking the Management Style Diagnostic Test. These levels are probably lower than exist now because medical technologists were being upgraded during 1984. The medical technologists were moved from GS-7 to GS-9. Supervisors were reclassified from GS-9 to GS-11 and some of the laboratory managers were upgraded also. Results were not consistent and many persons filed appeals because of the discrepancies.

Table 16

GS Level Before Becoming Laboratory Manager

GS Level	Frequency	Percentage
6	1	1.33
7	6	8.00
8	5	6.67
9	36	48.00
10	2	2.67
11	20	26.67
12	3	4.00
13	1	1.33
14	0	0.00
15	1	1.33
Totals	75	100.00

Table 17

GS Levels of Laboratory Managers at Time of Study

GS Level	Frequency	Percent	Effective Management Styles Used
9	8	10.67	62.50%
10	7	9.33	42.86%
11	36	48.00	83.33%
12	21	28.00	80.95%
13	1	1.33	100.00%
14	0	0.00	0.00%
15	2	2.67	50.00%
Totals	75	100.00	

Table 18 shows the General Service (GS) levels by age and gender. Note the two GS-15 positions were pathologists who also functioned as laboratory managers. Most of the laboratory managers, both male and female, were in the 31-40 years of age bracket.

Table 18

GS Levels by Age and Gender

GS Level	Age	Gender	Frequency	Percentage
9	31-40	Female	1	8.33
11	"	"	9	75.00
12	"	"	2	16.67
9	41-50	Female	1	10.00
10	"	"	1	10.00
11	"	"	5	50.00
12	"	"	3	30.00
10	51-60	Female	1	11.11
11	"	"	5	61.62
12	"	"	3	27.27
9	31-40	Male	4	23.53
10	"	"	1	5.88
11	"	"	8	47.06
12	"	"	4	23.53
9	41-50	Male	2	12.50
10	"	"	2	12.50
11	"	"	5	31.25
12	"	"	5	31.25
15	"	"	2	12.50
10	51-60	Male	2	18.19
11	"	"	4	36.36
12	"	"	4	36.36
13	"	"	1	9.09
Total			75	

A comment section was included on the personal data questionnaire. Two respondents made comments: (a) I like the term coordinator instead of manager since I coordinate activities rather than manage people. (b) I appreciate the interest in studying laboratory managers. We are stepchildren as professionals and are usually neglected.

No demographic variables were reliable predictors of effective management style. Only the data concerning the majority of respondents were tested. These data included age, gender, educational level, special awards received, and GS level of laboratory managers.

Summary of Analysis of Data

This chapter contained findings analyzed by expected and observed frequencies and percentages, and chi-square values, various tables of management styles and demographic data and the answers to the research questions found in Chapter I. Most of the VA laboratory managers were effective managers with the developer style being the most popular with both male and female laboratory managers. The demographic variables tested were not reliable predictors of effective management style. Most laboratory managers were not veterans and those who were veterans had a wide range of military occupations. Most laboratory managers did not transfer before or after becoming a laboratory manager.

Laboratory managers were asked to give their age by decade. Many people are sensitive about giving their age and asking respondents to

give a specific year could result in a lower return rate or in responses with missing data. In most cases age has not been found to be a determining factor in management style. The ages by decade are listed in Table 19.

Table 19

Age of Laboratory Managers in Sample

Age	Frequency	Percentage	Effective Management Style	Less Effective Management Style
31 to 40	29	38.67	89.67%	10.34%
41 to 50	26	34.67	74.92%	23.08%
51 to 60	20	26.66	80.00%	20.00%
Totals	75	100.00		

When respondents were categorized by age and gender, the groups were almost even in size (Table 20). The VA laboratory managers' use of effective management styles exceeded 50% in each age group. Reddin (1970) predicted that one should find an equal distribution of all eight management styles with 50% using effective management styles. Age did not appear to be a determinant of management style used by the VA laboratory managers.

Table 20

Laboratory Managers by Age and Gender

Gender	Age	Frequency	Percentage	Effective Management Style	Ineffective Management Style
Female	31-40	12	16.00	75.00%	25.00%
Female	41-50	10	13.33	80.00%	20.00%
Female	51-60	10	13.33	60.00%	40.00%
Male	31-40	17	22.68	82.35%	17.65%
Male	41-50	16	21.33	87.50%	12.50%
Male	51-60	10	13.33	100.00%	00.00%

Table 21 shows the management styles divided by age and gender with percentages for each style in each group. The developer style had the highest frequency in each age and gender group. The developer style is an effective style which is high in relations orientation and low in task orientation.

Table 21

Management Style Frequency in Total Sample

Style	Gender	Age	Frequency	Percentage
Benevolent Autocrat	Female	31-40	2	15.38
Deserter	"	"	2	15.38
Developer	"	"	8	61.55
Missionary	"	"	1	7.69
Autocrat	Female	41-50	1	10.00
Compromiser	"	"	1	10.00
Deserter	"	"	4	10.00
Developer	"	"	1	40.00
Executive	"	"	2	10.00
Missionary	"	"		20.00
Deserter	Female	51-60	2	22.22
Developer	"	"	4	44.45
Executive	"	"	2	22.22
Missionary	"	"	1	11.11
Benevolent Autocrat	Male	31-40	7	41.18
Deserter	"	"	2	11.76
Developer	"	"	5	29.42
Executive	"	"	2	11.76
Missionary	"	"	1	5.88
Compromiser	Male	41-50	2	12.50
Developer	"	"	9	56.25
Executive	"	"	5	31.25
Benevolent Autocrat	Male	51-60	1	10.00
Bureaucrat	"	"	2	20.00
Developer	"	"	4	40.00
Executive	"	"	3	30.00
Total			75	

Chapter Summary

Most of the VA medical center laboratory managers were very effective with 79.99% using effective management styles. The two most popular styles were the developer management style and the executive management style. The VA laboratory managers were well educated. Almost half (49.99%) had earned graduate degrees at the time of the study. Most VA laboratory managers had not transferred from one VA medical center to another and most VA laboratory managers were not veterans.

A majority of laboratory managers had been laboratory managers for five years or less. Only 5 out of 75 respondents had been laboratory managers for over 20 years.

Most of the laboratory managers in the study had received several special awards. Over half the laboratory managers who participated in the study received between two and four special awards.

Most of the laboratory managers were GS 11s and GS 12s. An upgrading program was being phased in during the time of the study. The number of GS 12s should increase and the number of GS 11s should decrease.

Most of the managers were male and between the ages of 31 and 40. Age and gender were not determining factors of management style.

CHAPTER IV
DISCUSSION

The study was designed to determine, based upon responses to Reddin's Management Style Diagnosis Test, the management styles and demographic characteristics of Veterans Administration Medical Center laboratory managers, the proportion of effective to ineffective managers in the system, and the characteristics of effective and ineffective managers. The population consisted of managers of 149 VA medical center laboratories. The VA laboratory managers who returned usable responses made up the study sample. The return rate was 50.33% for the survey instrument.

The Management Style Diagnosis Test (MSDT) was used to measure management style and management effectiveness. The four effective management styles detected by the MSDT are bureaucrat, executive, benevolent autocrat, and developer. The four less effective management styles detected are missionary, deserter, autocrat, and compromiser.

The personal data questionnaire was designed to elicit appropriate data about each laboratory manager in the VA medical center system. Demographic information sought included educational level at the time of employment; educational level at time of

response; number of times transferred in the VA system prior to employment as a laboratory manager (coordinator); number of times transferred in the VA system subsequent to employment as a laboratory manager (coordinator); years of experience as a medical technologist prior to employment in the VA system; years of experience as a medical technologist in the VA system; years as a laboratory manager (coordinator); number of special awards received while a VA employee; prior active military service; prior reserve military service; military service branch; job title while in the military service; GS level at the time of employment as a laboratory manager (coordinator); GS level at present; age (in age brackets 21 to 30, 31 to 40, 41 to 50, 51 to 60, over 60 years); and gender. These demographic data were available in VA personnel folders reviewed to determine the qualifications of applicants for the position of laboratory manager as well as any other position applied for.

Findings

In regard to the major research questions asked, all eight of Reddin's management styles were identified in the study sample of VA laboratory managers. Over 60% of the VA laboratory managers used one of two management styles--the developer style (45.33%) and the executive style (17.33%). According to Reddin (1970), the manager who uses the developer management style uses a high relation orientation

in situations where such behavior is appropriate and effective. The manager who uses the executive management style uses a high relation orientation and a high task orientation in situations where such behavior is appropriate and effective. The manager who uses the developer management style is perceived as having implicit trust in people and as being primarily concerned with developing them as individuals. The manager who uses the executive management style is perceived as a motivating force, who sets high standards, treats everyone differently, and prefers team management.

Of the remaining two effective management styles, 12% of the laboratory managers used the benevolent autocrat management style and 5.33% used the bureaucratic management style. Of the less effective management styles, 8.01% of the VA laboratory managers used the deserter management style; 6.67% used the missionary management style; 4.00% used the compromiser management style; and 1.33% used the autocrat management style. The management styles reported were converted into synthesized management styles so that one may examine the general organizational climate of management in the corporation, agency, or institution. According to Reddin (1970), the average organization will have approximately 50% of the managers using effective management styles. An organization that is having management problems may have a considerably lower percentage of managers using the effective management styles. With over 60% of the

VA laboratory managers using either the developer or executive management style and over 80% of the VA laboratory managers using effective management styles, it is herein concluded that this organization is managerially healthy and viable.

Reddin (1970) found that middle managers with master's degrees in business administration tended to use the executive and developer management styles. His research was not conclusive that the management style used was a result of the middle manager's situation or a result of the graduate educational program. Laboratory tasks are usually highly technical tasks. Reddin (1970) found that workers tended to be task oriented in high technology fields and their superiors tended to be relation oriented towards their subordinates. This was exactly the situation in which the VA laboratory manager was employed and the research of the management styles confirmed his findings.

Barrow (1975) found that increasing subordinate performance in a laboratory setting resulted in the manager becoming more supportive and decreasing subordinate performance caused the manager to be more task oriented. Perhaps the VA laboratory workers are above average performers due to the shortage of personnel in the system and the management styles used by laboratory managers.

The study sample consisted of 31 (41.33%) females and 44 (58.67%) males. The management style used most often by male and female

laboratory managers was the developer management style. The percentage for male laboratory managers using the developer style was 41% and 51% for female laboratory managers.

A VA laboratory manager is directly responsible for the section supervisors in the laboratory who are also first-line supervisors in the management system. The first-line supervisors are responsible for managing medical technologists, who are doing routine, highly repetitive work on a demand basis. The first-line supervisors can afford to be high task, low relations style managers. The effective VA laboratory manager may use a high relations, low task management style with the section supervisors because section supervisors are required to be more concerned with tasks.

Of the laboratory managers surveyed, 74.19% of the female laboratory managers used effective management styles and 86.36% of the male laboratory managers used effective management styles. This difference was significant using the chi-square statistic. The significance could not be explained by educational level, experience, or age. The difference may be due to the lack of randomization of the study sample. In any case, both groups were far above the 50% expected rate using effective management styles.

Most of the male and female laboratory managers were in the 31 to 40 age group. This was expected since most laboratory managers had between 1 to 10 years as a medical technologist before being promoted

to the position of laboratory manager. The age group with the least laboratory managers studied was in the 51 to 60 years of age group. This was also expected, since federal government employees may retire at age 55 with 30 years of government service including military service. One would have expected that these factors would cause a laboratory manager to retire earlier than in most other hospital settings.

A majority of laboratory managers held baccalaureate degrees at the time of becoming a laboratory manager as the minimum educational level. Almost one-third held graduate degrees at the time of selection as a laboratory manager. The percentage of graduate degrees had increased to approximately 50% at the time of the survey, compared to approximately 33% at the time of becoming a laboratory manager. Over 75% of the laboratory managers surveyed who possessed baccalaureate degrees and/or graduate degrees used effective management styles. The baccalaureate degree group percentage of effective management styles was slightly higher than the graduate degree group. The difference was possibly due to the study sample; no conclusive explanation could be determined by reviewing the data collected.

Advanced degrees are encouraged for both personal and professional development. With the advent of part-time evening and weekend graduate educational programs, more educational opportunities

are available. However, leaves of absence for educational purposes are discouraged due to the probable disruption of the laboratory resulting from another vacancy when the system is already short-staffed.

Some laboratory managers had management and business degrees and did not have a medical technology background. Most laboratory managers did have a degree in medical technology.

A majority of laboratory managers were employed as medical technologists before being promoted to laboratory managers. The mean time was 5.29 years working as a medical technologist. This relatively short time corresponds to the age group of laboratory managers of 31 to 40 years into which most laboratory managers fall.

Most laboratory managers did not transfer from one VA medical center to another. This was somewhat unexpected because one avenue for promotion is to transfer to a larger facility where the duties and responsibilities are increased along with a higher GS level. Since one can usually be promoted only one GS level with each move, perhaps it is not financially motivating to move and disrupt the present family and social situations.

The VA laboratory managers surveyed had a wide range in years of employment. The range was 1 to 34 years of employment with the Veterans Administration. The mean years of employment was 12.43 years. Years of employment was not an indicator of effective

management style. The effective managers were equally distributed throughout the range.

Most of the laboratory managers surveyed had been employed as laboratory managers for an average of 7.8 years. There was a wide range in years as a VA laboratory manager. Some of the laboratory managers obtained experience in the Armed Forces medical system and other hospital systems before employment in the VA system. Years of experience as a laboratory manager was not indicative of effective management style.

Since most of the VA laboratory managers used effective management styles, it is only logical that they should receive higher than average performance appraisal ratings. Indeed this was the finding. Over 70% of the VA laboratory managers had received at least two special awards based on performance in their position as a laboratory manager.

One unexpected finding was that the majority of VA laboratory managers were not veterans. Veterans are given special preference in employment in the initial entry level position as a medical technologist, but this is not the case in the selection of laboratory managers since it is not an entry level position. Another contributing factor to the low percentage of veterans was the fact that a high percentage (41.33%) of the laboratory managers were female. United States women have never been drafted and some

medical positions in combat zones are restricted to males only. These factors restrict the selection of females in the Armed Forces. During the 1960s and 1970s, there was an effort on the part of the federal government to employ more minorities and women. If this study had taken place in the 1950s, the results may have been quite different in the number of female laboratory managers. Another trend which expanded opportunity for non-veterans was the waiting period required from retirement from active military service to an employment position in the Veterans Administration health care system. This gave non-veterans more of an equal chance of initial employment by the Veterans Administration. This provided non-veterans and especially handicapped individuals more of an equal chance of initial employment by the Veterans Administration.

Most of the VA laboratory managers who were veterans had medically-oriented occupational skills during their tours of duty in the military. Most of the medically-related skills were for enlisted personnel, and most of the enlisted military personnel later graduated from colleges or universities and became medical technologists in this particular group. This was during a time when the GI Bill was very generous in payments for continued education for veterans.

The mean GS level for laboratory managers was 9.55 before being promoted to the position of laboratory manager. The GS levels ranged from GS6 to GS15. The GS15 individual was a pathologist in a small VA

hospital, and he also performed the duties of a laboratory manager as well as a pathologist. The wide range of GS levels was due to the wide variation in the size and class of VA hospitals. In the past, the GS levels have increased as the duties and responsibilities have increased and also when the minimal educational level requirements have increased. A very small hospital, especially a psychiatric hospital with a small clinical laboratory, may have only three employees, with the laboratory manager being a GS6 laboratory technician.

Most laboratory managers were GS11 level, as most of the newer medical centers are of the medical and surgical class, are approximately the same size, and are affiliated with medical schools. Whereas in the past the VA built separate nursing homes and psychiatric hospitals, the new nursing homes and psychiatric centers are affiliated with the newer medical and surgical hospitals.

During this survey, the medical technologists' positions were being upgraded from GS7 to the GS9 levels, and the section supervisors were being upgraded from GS9 to GS11 level. Some laboratory managers were upgraded but it was not systemwide, but if a survey were conducted after 1989, one would find a great deal more laboratory managers at the GS12 level.

One GS13 laboratory manager was responsible for the laboratory at the VA medical center in Vancouver, Washington, and also at the VA

medical center in Portland, Oregon. These two medical centers are in two different states but they are only about 10 miles apart. This is consistent with the policy of increased GS level with increased duties and responsibilities. There are two medical centers in Lexington, Kentucky, but each medical center employs a separate laboratory manager. This is also the case in New York City.

Age did not appear to be a factor related to effective management style used by the VA laboratory managers. There was a significant difference between male and female laboratory managers and effective and less effective management styles. When management style was selected on the basis of age and gender, the same predominant management style of developer appeared in the majority of each group. This conclusion is supported by the earlier research conducted by Jones (1968), Berk (1976), and Sanchez (1979).

When GS level was selected on the basis of age and gender, the majority of laboratory managers fell into the GS11 and GS12 levels in each age and gender group. As more medical centers are expanded in the system, one would expect the GS levels to increase.

A majority of laboratory managers were employed as medical technologists before being promoted to laboratory managers. The mean time was 5.29 years working as a medical technologist. Some laboratory managers had management and business degrees and did not have a medical technology background, but those were the exceptions.

Perhaps there is no difference between a manager with a laboratory background who has to learn management theories and principles or the manager who has a management background and must learn how a laboratory functions.

Answers to Research Questions

What management style categories do Veterans Administration Medical Center laboratory managers select as being most descriptive of themselves? The majority of both male and female laboratory managers used either the developer management style or executive management style. The developer is a manager who uses a high relation orientation and a low task orientation. This is a highly effective management style. The executive manager uses a high relations orientation and a high-task orientation. The executive style is also a very effective style to use. The high relations plane are common to both styles and have historic backgrounds in the human relations movement with proponents like Follett (1924), McGregor (1960), and Blake and Mouton (1964).

What percentage of laboratory managers respond to the Management Style Diagnosis Test (MSDT) in such a way that they are characterized as effective as opposed to less effective? Of the VA laboratory managers responding to the survey, 79.99% used effective management styles.

What are the demographic characteristics of the effective versus the less effective managers, as categorized by the Management

Style Diagnosis Test? With 79.99% of the VA laboratory managers responding to the survey using effective management styles, no demographic factor or set of factors was found that predicted effective or ineffective management style.

Is the distribution of effective and ineffective managers significantly different for males and females? The distribution between male and female laboratory managers using effective and less effective management styles was statistically significant. In both gender groups, the percentages of effective managers exceeded the percentages predicted by Reddin (1970).

Is the distribution of effective and ineffective managers significantly different for different age categories? All age categories exceeded the number predicted by Reddin (1970). Age was not a determining factor in predicting management style.

Is the distribution of effective and ineffective managers significantly different for those holding bachelor's and those holding graduate degrees? The difference in management styles used by those holding bachelor's degrees and those holding graduate degrees was not statistically significant.

Conclusions

Almost 80% of the VA laboratory managers used effective management styles. VA laboratory managers are an effective, well-educated group of individuals. Most VA laboratory managers have worked as medical technologists, have been promoted to laboratory

section supervisors, and the best of those have been promoted to laboratory managers.

Even though most of the VA laboratory managers used effective management styles, more management, supervision, and administration courses need to be included in the curriculum in medical technology training programs. Although most medical technologists will not become laboratory managers, more management coursework would help the medical technologists understand their own role in support of laboratory section supervisors and hospital management. Additionally, medical technologists have the potential to at some point in their careers become section supervisors or laboratory managers.

Since most medical technologists work independently of each other, they are managers of their own work. At least one course emphasizing effective coordination techniques, time management, and developing communication skills with peers and supervisors would enhance their job-readiness and adaptability once on the job. The course would also provide a basic framework for assuming management and supervisor responsibilities. Additional training (either formal coursework or on-the-job training) would be necessary for a medical technologist to effectively assume the role of laboratory manager.

As pointed out in Chapter I, psychologists studying group effectiveness and efficiency found that the success of a functioning group is generally related to the leader, as well as the members of

the group, and the task to be performed (Blake & Mouton, 1964; Fiedler, 1967; Reddin, 1970). VA laboratory managers who have experience as a medical technologist doing laboratory benchwork provide a positive basis for later managing others doing the job. In this study, the majority of VA laboratory managers perceived themselves as effective managers based on situation-specific issues. This finding validated the assumption that it is easier to teach a medical technologist what he or she needs to know about management than it is to teach a business professional what he or she needs to know about a laboratory.

The current process being used by the U.S. Office of Personnel Management (OPM) for the selection of laboratory managers involves a screening process by personnel specialists and interviews by the chief pathologist using a subjective 100-point scale. This is effective in selecting individuals who are able to function effectively as laboratory managers, based on the validity and reliability of the MSDT as expounded in this study.

Consideration should be given by the VA to rewarding laboratory managers monetarily for their effectiveness. A recommendation is made for further study which may assist in validating effectiveness as an objective basis for salary increases, although this would be only temporarily motivating and rewarding unless coupled with public recognition as described by McClelland (1962) and reinforced by Maslow

(1954). These researchers shared the position that, at least in part, people are motivated not only by monetary rewards but through the attainment of self-esteem, self-actualization, and belonging through accomplishments.

With 45.33% of the VA laboratory managers being developers and 17.33% being executive in terms of management styles, monetary and recognition rewards would be motivating to a majority of these managers. The developer and executive management styles are defined by the MSDT as both using high relationships orientation in situations where such behavior is appropriate and is therefore more effective. The executive and developer styles are primarily concerned with developing people they supervise as individuals and treating them differently and preferring team management. These management styles have personal job relationships characterized by mutual trust, respect for subordinates' ideas, and consideration for their feelings.

As the position of laboratory manager has been described in this study, the task component, while a primary function of the people supervised, is not a high concern for the manager in most instances. The manager's primary concern is in the area of human behavior as exhibited in communication and relationships of the staff under his or her supervision which includes supervisors, medical technologists, medical technicians, and others.

Follett (1924) purported that organizational problems are basically human relations problems. The role of the VA laboratory

manager is to socialize the employees under their organization to accept the goals of the organization as their own so that in the accomplishment of the goals of the organization they receive personal satisfaction and reward which is self-motivating. These organizational goals are accomplished by the managers through the use of their effective management styles.

The VA laboratory manager is daily challenged by problem-solving activities involving human behavior and interactions each requiring different management styles to arrive at the optimum resolution. Flexibility in the use of management style, to accommodate individual interests and needs, is one of the primary skills a laboratory manager possesses based on this study. The management styles used by a majority of VA laboratory managers resemble McGregor's (1960) Theory Y in which people are provided the opportunity for self-control and are allowed to take responsibility. Workers are given the opportunity to be creative and self-directed in the performance of their technical duties. Reddin, in 1970, equated the developer and executive styles with Theory Y.

Herzberg's (1966) Hygiene Factors include motivators, achievement, recognition for accomplishment, challenging work, increased responsibility, growth and development. Based on this study, the VA personnel system with monetary rewards and recognition meets the basic needs that Herzgerg wrote about.

Recommendations for Future Study

A longitudinal study that includes information concerning management courses and training provided by the VA either in-house or attendance at conferences, seminars, and workshops for laboratory managers which would include training available to medical technologists aspiring to the position of section supervisor or laboratory manager and its effect on later managerial functioning promotion and job satisfaction should be conducted. The study should also include training provided to supervise both formally and informally once promoted on a continuing basis and its effect on promotions to manager and assess both functioning as a supervisor and later as a manager. The study should also include training provided to VA laboratory managers and its effect on managerial functioning by looking at course and training outcome objectives and how they are related to position duties. A survey written through structured interview of the staff members being supervised should be conducted. A comparison of managers' and supervisors' perceived management styles and the perceptions of their staff would be helpful.

A study should be designed to include a review of the objective and subjective criteria used by VA personnel employees to screen VA laboratory managers on the basis of background data. These data should then be viewed in comparison to the subjective 100-point scale

used by the chief pathologist to interview applicants for laboratory manager positions. The final phase should compare the initial results to later managerial style while functioning on the job to validate job relatedness of criteria. Although this study alludes to the fact that since the study is based on the MSDT and a majority of the laboratory managers perceive themselves as effective managers, these other studies would further validate the current effectiveness of the selection process or may indicate areas for improvement in the process or for additional training needs of VA laboratory managers and their staff. Current research indicates that the interview process can be developed into a more objective than subjective process. The interview process could be used for validation for selected VA laboratory managers but was inappropriate for the initial study because of the wide dispersion of VA laboratory managers throughout the contiguous U.S.

Another longitudinal study that may provide insight into management effectiveness could be an assessment of management technical-task oriented skills of VA laboratory managers. Based on Shartle (1934) and the results of this study, people-oriented managers were assessed as the most effective managers as they are able to interact effectively and were interested in people. Shortle (1934) also indicated that these effective managers did not necessarily excel in technical skills.

Further study is needed to assess whether the predominant management style is maintained especially under pressure, stress, tension, frustration, and organization conflict. If there is a change in management styles, then what are they? This study would also need to define the stresses--professional as well as personal--that VA laboratory managers are impacted by. Implications could be found for management training and reinforcement and use of stress reduction techniques.

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APPENDIX A
LETTER TO LABORATORY COORDINATORS

Dear Laboratory Coordinator:

Several persons in positions comparable to yours have expressed an interest in knowing whether a relation exists between managerial style of VA laboratory coordinators and factors such as sex, age, and educational level. Little is known about laboratory coordinators as a group.

As a medical technologist at the Veterans Administration Medical Center in Gainesville, Florida, I am concerned with obtaining these results to better understand the demographic characteristics of the laboratory coordinator.

Enclosed are two items: (a) a background data questionnaire and (b) a Management Style Diagnostic Test (MSDT). You can complete these two items in less than 30 minutes. Your help will be greatly appreciated.

If you will complete and return the forms in the return-addressed, stamped envelope, I will mail you a copy of the compiled results. They will include the range of values for each item on the questionnaire and any relationship with managerial styles. If you would like to score your own managerial style test, please use the highlighted section of the Users Guide, which contains the adjustment factors for the MSDT, second edition. This information may be useful to you as you pursue your career. If you are planning to remain a laboratory coordinator, the results may help you determine if a graduate degree would be useful and the kind of degree that would be most appropriate.

If you would like to fill out the bottom portion of the Management Style Diagnostic Test on the cover sheet, please do so. This will help the company that designed the test. Please send the bottom portion of the cover sheet to Organizational Tests Ltd.

Responses to the survey questionnaire are anonymous. Do not include your name. The information we receive will be reported only in summary form. The population for this study will be all laboratory coordinators in the United States. The success of the project is dependent on your help.

Thank you,

Ed Holmes, M.Ed., M.T. (ACSP)
Project Coordinator

Enclosure

APPENDIX B
VETERANS ADMINISTRATION LABORATORY COORDINATOR
BACKGROUND DATA QUESTIONNAIRE

Educational level at the time of employment as a laboratory coordinator. Please fill in blanks:

_____B.S. or B.A. Major_____

_____M.S. or M.A. Major_____

_____MBA Major_____

_____M.Ed. Major_____

_____Ed.D. Major_____

_____Ph.D. Major_____

_____Other_____ Major_____

Educational level at present.

_____No change since employed.

_____B.S. or B.A. Major_____

_____M.S. or M.A. Major_____

_____MBA Major_____

_____M.Ed. Major_____

_____Ed.D. Major_____

_____Ph.D. Major_____

_____Other_____ Major_____

Please fill in blanks:

Number of times transferred in the VA system before employment as a laboratory coordinator. _____

Number of times transferred in the VA system after employment as a laboratory coordinator. _____

Years of experience as a medical technologist before employment in the VA system. _____

Years of experience as a medical technologist in the VA system. _____

Years as a laboratory coordinator. _____

Number of special awards received as a VA employee. _____

Prior military service _____ years active duty
_____ years reserve duty

Branch _____ Job Title _____

GS level at the time of employment as a laboratory coordinator. _____

GS level at present. _____

Please place a check in appropriate space:

AGE	SEX
_____20 to 30 years	_____Female
_____31 to 40 years	_____Male
_____41 to 50 years	
_____51 to 60 years	
_____over 60 years	

Comments:

BIOGRAPHICAL SKETCH

Edwin Howard Holmes, Jr. was born in Jacksonville, Florida, where he attended grade school and high school. He received the degree of Bachelor of Science in biology in 1970. Following graduation he was employed as a biology teacher in the Duval County School System in Jacksonville. He attended Baptist Memorial Hospital School of Medical Technology and graduated in 1972. He was employed as a medical technologist in the hematology section at Baptist Memorial Hospital for the next year.

In 1973, he was employed as a staff medical technologist at the Veterans Administration Hospital in Gainesville, Florida. While continuing employment, he graduated from the University of Florida in 1977 with a Master of Education degree in health occupations education. Following completion of the master's program, he was promoted to section supervisor of the immunology department at the Veterans Administration Hospital.

Ed received the Doctor of Philosophy degree from the University of Florida in 1988. He majored in higher education administration.

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

James W. Longstreth, Chairman
Associate Professor of
Educational Leadership

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Ralph B. Kimbrough
Professor of Educational Leadership

I certify that I have read this study and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.

Margaret K. Morgan
Professor of Educational Leadership

This dissertation was submitted to the Graduate Faculty of the College of Education and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

December, 1988

Dean, College of Education

Dean, Graduate School

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